

TACOM LCMC Sustainment Engineering Risk Assessment (SERA) Overview

Source: Tony Mitek IBET TL, TARDEC

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Agenda



- Purpose
- Overview
- Why should the PM care about SERA?
- Reactive versus Proactive
- TACOM LCMC SERA Mission
- SERA Objective
- SERA Data Sources
- SERA Database Screenshot Examples
- SERA Histogram
- SERA Application/Capability
- Summary/Questions



Purpose



Identify and provide an overview of the TACOM LCMC equipment Sustainment Engineering Risk Assessment (SERA) objective, process, and benefits





SERA Overview



- The Sustainment Engineering Risk Assessment (SERA) is a tool that is utilized to identify and document system, platform, or vehicle level sustainment and obsolescence risk evidence. It leverages a wide range of data sources such as OSMIS, ILAP, LIW, FEDLOG, Haystack, Dun & Bradstreet, as well as others.
- The SERA provides an assessment of the targeted equipment by first analyzing the Provisioning Master Record (PMR) which represents the current support strategy of the equipment. The PMR is the initial input for a SERA. By conducting a SERA, a platform manager is fulfilling the requirements of AR 700-127 which mandates re-evaluation of the equipment support strategy every 3-5 years.
- The SERA provides a single data collection point for nationally stocked parts as well as the part suppliers. Some of the information gathered includes Customer Wait Time, Work Order History, Back Order History, Demand Data, Part Complexity and Hierarchy, TDP Availability, Single Source Conditions, Hazardous Material, Shelf Life Sensitivity, CONUS or OCONUS source location, Supplier Dun & Bradstreet Financial Risk information, and many others.
- ***The output from a SERA provides Platform or Equipment Managers factual documentation necessary to forecast resources via AWCF, SSTs, and plan corrective actions and material change efforts. SERAs can also be used to support cost and sector studies, Value Engineering opportunities, Industrial Base studies, and commonality assessments.***



Why should the PM care about SERA?



SERA will:

- Identify if particular suppliers are rated a high financial risk by Dun & Bradstreet.
- Identify if parts are single sourced and the government does not have the technical data.
- Identify which spare parts have not been ordered by the government in the past 5 years.
- Identify which spare parts have the longest customer wait times.
- Allow for virtually unlimited sustainment and industrial base related data sorts

By providing such data points you will be able to:

- Help answer questions from Congress, Army and DOD senior leaders on Industrial Base (IB) issues with fact-based information.
- Reduce dependency on OEMs for supply chain data.
- Target areas and issues requiring a "deeper dive" analysis or further action.
- Support fact-based AWCF and SSTS funding requests.
- Provide visibility into the Army's direct supply chain as well as those common suppliers currently supporting OEM production.



Why should the PM care about SERA?



Other SERA benefits include:

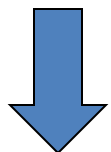
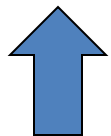
- Indicate what levels of risks are associated with contactors, and provide critical information for decision makers to make more informed decisions to effectively mitigate industrial base risks. The key is to maintain the capability to obtain required components - not necessarily to keep current vendors in business.
- Identify sustainment risks (as opposed to production shortage risks), by part and by vendor, in order to be proactive rather than reactive. This information will inform the PM on developed mitigation strategies.
- Avoid expensive "quick fixes" when faced with sudden part unavailability. Cost effective part solutions are best developed and implemented when issues can be addressed ahead of time.
- Identifies part hierarchy (Next Higher Assembly as well as lower level components) which allows for part complexity analyses.
- Fleet readiness and mission capabilities are maintained when essential part supplies that can cause long vehicle downtimes are prevented from being cut off unexpectedly.



Reactive vs. Proactive



REACTIVE



PROACTIVE

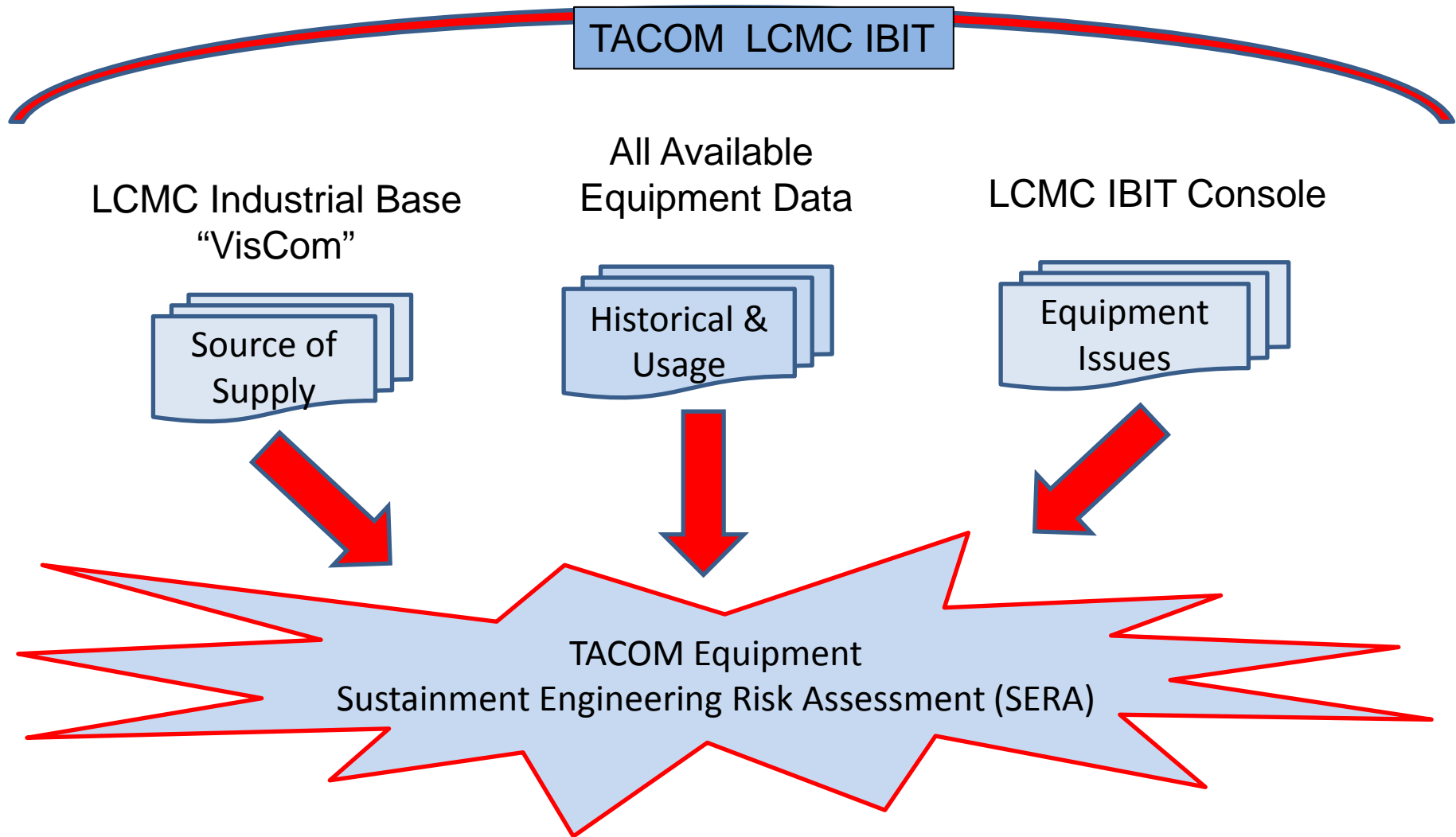


- Backorders
- DLA 339s
- Shortages
- Obsolescence
- DMSMS

Utilize data assessment methods (SERAs) to identify proactive opportunities and prevent reactionary circumstances



TACOM LCMC SERA Mission

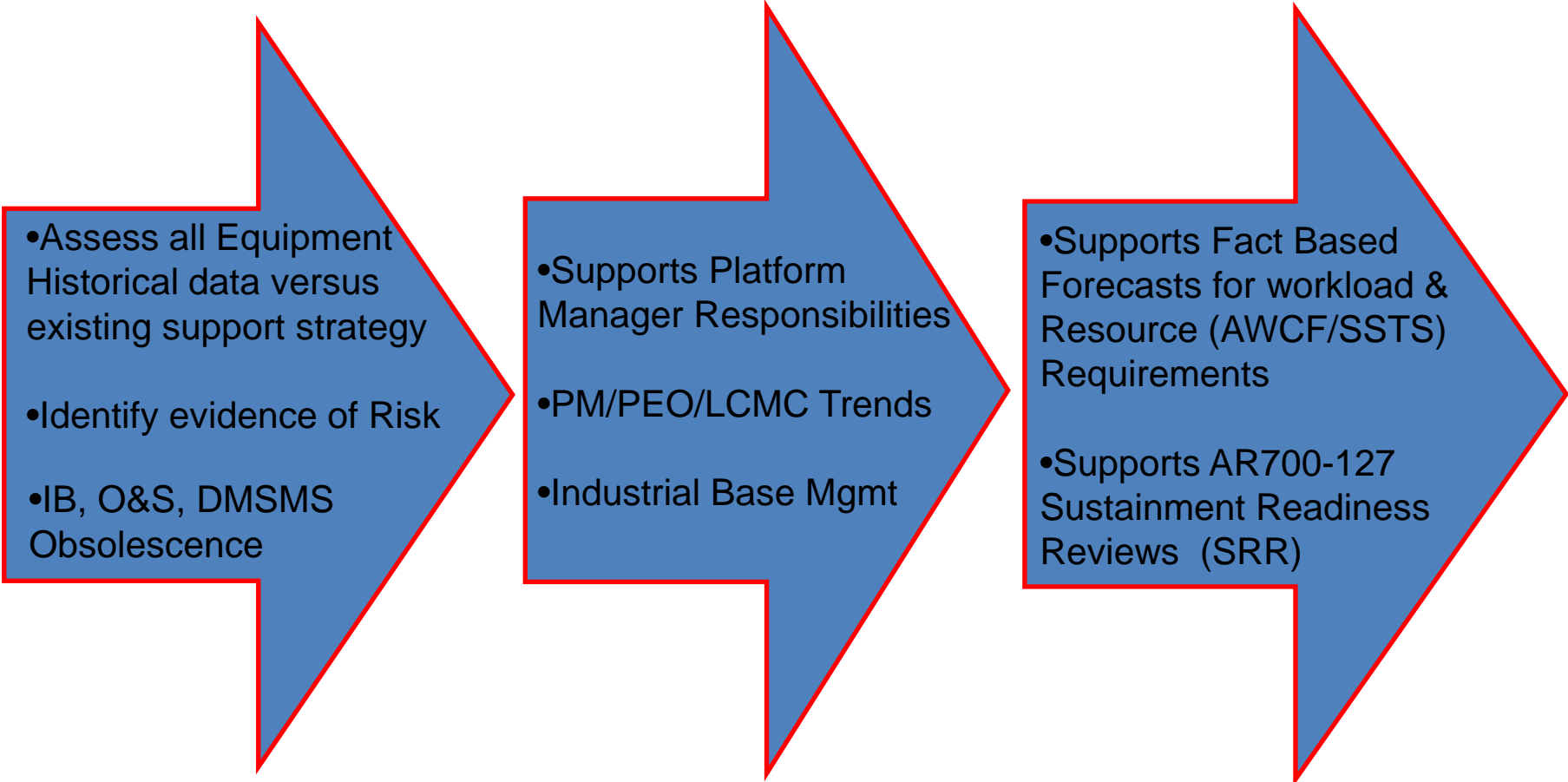




Sustainment Engineering Risk Assessment (SERA) Objective



- Proactively evaluate equipment data to assess effectiveness of support strategy and identify support or industrial base related obsolescence and sustainment risk.

- 
- Assess all Equipment Historical data versus existing support strategy
 - Identify evidence of Risk
 - IB, O&S, DMSMS Obsolescence

- Supports Platform Manager Responsibilities
- PM/PEO/LCMC Trends
- Industrial Base Mgmt

- Supports Fact Based Forecasts for workload & Resource (AWCF/SSTS) Requirements
- Supports AR700-127 Sustainment Readiness Reviews (SRR)



Sustainment Data Elements



SERA Selection Matrix & Risk Priority Indicator

48 max

NOTE: Sort Order: 1) Decreasing RPI 2) Decreasing Unit Price

Mfg Sources

Line #	Normalized RPI (1.000 Scale)	Overall Risk Priority Indicator	FSC	FSC Group Description	NIIN	NOMENCLATURE	CON/ REP	AMDF UNIT PRICE	Unit Price Flag	Count of CAGE CODEs	CAGE Code Flag	CAGE Code Exclusion Factor
1	0.938	45	2815	Diesel Engines and Components	01-523-6667	ENGINE,DIESEL	R	\$32,685.00	1	1	1	1
2	0.938	45	2520	Vehicle Power Transmission Components	01-435-0408	PROPELLER SHAFT WIT	C	\$619.00	1	1	1	1
3	0.833	40	2940	Engine Air and Oil Filters - Nonaircraft	01-514-2457	FILTER ELEMENT,INTA	C	\$73.18	1	1	1	1
4	0.771	37	2520	Vehicle Power Transmission Components	01-347-7646	TRANS ASSY W CONTAI	R	\$11,065.00	1	1	1	1
5	0.771	37	2530	Vehicle Brake Steering Axle Wheel Components	01-327-1350	STEERING GEAR	C	\$905.00	1	2	0	1
6	0.729	35	2520	Vehicle Power Transmission Components	01-505-7556	AXLE ASSEMBLY,AUTOM	R	\$27,342.00	1	2	0	1
7	0.729	35	6680	Liquid-Gas-Motion Measuring Instruments	01-540-3074	METER-RECORDER,TIME	C	\$2,048.00	1	1	1	1
8	0.729	35	2930	Engine Cooling Sys Comps - Nonaircraft	01-331-2987	RADIATOR,ENGINE COO	C	\$1,950.00	1	1	1	1
9	0.729	35	4330	Centrifugals Separators and Filters	01-538-9923	PARTS KIT,FLUID PRE	C	\$415.00	1	1	1	1
10	0.729	35	5330	Packing and Gasket Materials	01-150-9812	GASKET AND SEAL SET	C	\$88.23	1	2	0	1
11	0.729	35	6220	Electric Vehicular lights and Fixtures	01-495-2851	LIGHT,WARNING	C	\$36.89	1	1	1	1
12	0.729	35	2590	Miscellaneous Vehicular Components	00-778-0324	TRAILER COUPLING,TE	C	\$19.61	1	4	0	1
13	0.708	34	2815	Diesel Engines and Components	01-479-4199	ENGINE,DIESEL	R	\$33,275.00	1	3	0	1
14	0.708	34	2920	Engine Electrical Sys Comps Nonaircraft	01-517-1792	MODULATOR ASSEMBLY,	C	\$2,412.00	1	1	1	1
15	0.708	34	7025	ADP Input/Output and Storage Devices	01-509-8642	DATA ENTRY UNIT	C	\$106.29	1	4	0	1
16	0.708	34	5330	Packing and Gasket Materials	01-319-2137	GASKET	C	\$32.59	1	2	0	1
17	0.688	33	4710	Pipe and Tube	01-331-6720	TUBE ASSEMBLY,METAL	C	\$119.85	1	1	1	1

All Data Elements & Flags
(OVER 80 Data Items)

All Repair Parts / NSNs

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Data Element Flags



Weight Factor	Risk Indicator Description	
5.0	No valid commercial CAGE Code	Source
4.0	Single CAGE Code	
5.0	Government or Standards CAGE Code	
4.0	D&B High Risk Indicator	
3.0	D&B Medium Risk Indicator	
1.0	D&B Unscored Risk Indicator	
1.0	OCONUS Only CAGE Code	
3.0	Discontinued AAC Code with Demand in past 2 years	Characteristics
3.0	Readiness Driver	
2.0	Part Complexity	
1.5	Single Weapon System	
1.0	Source Controlled Item	
3.5	Technical Data Unavailable	
2.5	Technical Data with Limited Availability	
2.0	Hazardous Materials	
1.0	Shelf Life Sensitivity	
4.0	Persistent Back Order 8-Month	Activity
3.0	Top 10% CWT	
3.0	No Demand in past 3 years	
2.0	Top 10% Closed Maintenance Work Order for NMC Items	
1.5	Top 10% Open Maintenance Work Order in past 12M for NMC Items	
1.0	Open Maintenance Work Order in past 12M for NMC Items	

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Risk Priority Indicator Matrix



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MS Access Views and Reports



Menu - AADO SERA

Home Create External Data Database Tools Add-Ins

Views Clipboard Font Rich Text Records Sort & Filter Window Find

AADO SERA - M915 FOV [Exit](#)

Risk Indicator Matrix

[Risk Indicator Matrix \(M91Z Only\)](#)

[NIIN Lookup](#)

[Cages](#)

[Supply Classes](#)

[Utilities Menu](#)

Risk Grouping Reports

Single CAGE Code Plus...

[PBO 6 Mos + Zero Stock w/ Due Out](#)

[No TDP + High D&B Score](#)

[High D&B Score](#)

[No TDP](#)

[Acquisition Advice Code](#)

[No Orders in Past 5 Years + No TDP](#)

[No Orders in Past 5 Years \(Single CAGE\)](#)

[OCONUS Only \(Single CAGE\)](#)

[Summary by Cage](#)

[Detail by Cage](#)

[Detail by Cage \(Govt or Standard only\)](#)

[Summary by FSC](#)

No Active CAGE Code

[Top 100 RPI List](#)

[PBO 6 Mos](#)

[PBO 6 Months + Rand Readiness Driver](#)

[Zero On Hand Stock w/ Due Out](#)

[Zero On Hand Stock](#)

[Rand Readiness Driver + High D&B Score](#)

[Rand Readiness Driver by Demand](#)

[Top 15% Customer Wait Time](#)

[RoHS Indicator \(HMIC and HCC\)](#)

[Warehouse On Hand Stock](#)

[No Orders in Past 5 Years \(All\)](#)

[OCONUS Only \(All\)](#)

[TDP Available \(AMC, AMSC are 1G & 2G\)](#)

[Top 100 RPI NIINs - Count by CAGE](#)

General Reports

[FSGs with NIIN Count](#)

[FSGs with NIIN Count \(All\)](#)

[FSCs with NIIN Count](#)

[FSCs with NIIN Count \(All\)](#)

There are **0** null FSC descriptions

There are **3** CAGES with no status

There are **3700** CAGES with no prescreen score

There are **137** NIINs with no SC

There are **137** NIINs with no Rand

Form View

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Additional NIIN Data



NIIN Lookup - AADO SERA

Home Create External Data Database Tools Add-Ins

Select a NIIN: Rank: 17 Norm RPI: 0.44 Total weight: 25.5

NATO Item Identification Number (NIIN): **01-505-7554** Replaced by:

Nomenclature: **RADIATOR,ENGINE COOLANT**

Source: **PMR - total pmr.txt of 2/18/2011**

Supply Class (SC): **9 - Repair Parts**

Federal Supply Group (FSG): **29 - Engine Accessories**

Federal Supply Classification (FSC): **2930 - Engine Cooling Sys Comps - Nonaircraft**

Consumable/Repairable: **Consumable** FEDLOG systems used on:

Rand readiness driver/flag: **2.5**

Sources

	Valid	All
CAGE codes (CONUS):	3	3
CAGE codes (OCONUS):	0	0
Total:	3	3

Single or no CAGE code flag: **0.0**

OCONUS only CAGE code flag: **0.0**

D&B high risk flag: **0.0**

Maintenance Work Orders

Closed	Opened
NIIN quantity: 71	
Workorders (2005-10): 72	Past 12 months: 31
Flag: 2.0	Flag: 2.0
Top 15% flag: 2.5	Top 15% flag: 2.5

Back Orders

Persistent (6 months consecutive)/flag: **0.0**

Recent (since 1 Sep 2010)/flag: **2.0**

AMDF Pricing

AMDF price	Added	Source
\$1,061.00	5/23/11	Spreadsheet - Automation Alley-M915

AAC **AMC** **AMSC** **SLC**

AAC flag: **0.0** TDP flag: **2.5** SLC flag: **0.0**

Customer Wait Time

Year	Days
2008	10.1
2009	15.0

Warehouse Authorized Stockage List

Current on hand balance: **5**

Current requisition objective: **11**

Zero stock with recent demand flag: **0.0**

Warehouse OH stock flag: **3.5**

Zero stock with due out flag: **4.0**

OSMIS

Year	Quantity
2005	47.0
2006	26.9
2007	27.0
2008	18.7
2009	22.0
5 year total:	141.6

ILAP Demand

Year	Quantity
2005	22
2006	27
2007	30
2008	37
2009	46
5 year total:	162

No demand weight: **0.0**

Hazardous Materials

HMIC: **N**

Hazard count: **0**

Hazardous material flag: **0.0**

SWA/Non-SWA ILAP DOCHNO CT

SWA count:

Non-SWA count:

SWA/Non-SWA ratio:

Ordered as a RESET Docno: **N**

CAGE Codes

Cage	Valid	Name	City, State	Country	Prescreen score	Status
2A413	<input checked="" type="checkbox"/>	BEHR HEAT TRANSFER SYSTEMS II	NORTH CHARLESTON,	UNITED STATES	Medium Risk	A - Active. Com
55683	<input checked="" type="checkbox"/>	WHEELER BROS. INC.	SOMERSET, PA	UNITED STATES	Low Risk	A - Active. Com
64678	<input checked="" type="checkbox"/>	DAIMLER TRUCKS NORTH AMERIC	PORTLAND, OR	UNITED STATES	Low Risk	A - Active. Com

Count: 3

Contracts

Date	Cage	SOS	Contract number	Contract X	Quantity	UI	Price	Total amount
9/8/10	55683	AKZ	W56HZV07D0081	VD040024AA	40	EA	\$916.77	\$36,670.80
12/30/09	55683	AKZ	W56HZV07D0081	VD030023AA	29	EA	\$873.11	\$25,320.19
12/30/09	55683	AKZ	W56HZV07D0081	VD030023AA	29	EA	\$0.00	\$0.00
9/11/09	55683	AKZ	W56HZV07D0081	VD020023AA	40	EA	\$873.11	\$34,924.40

Form View

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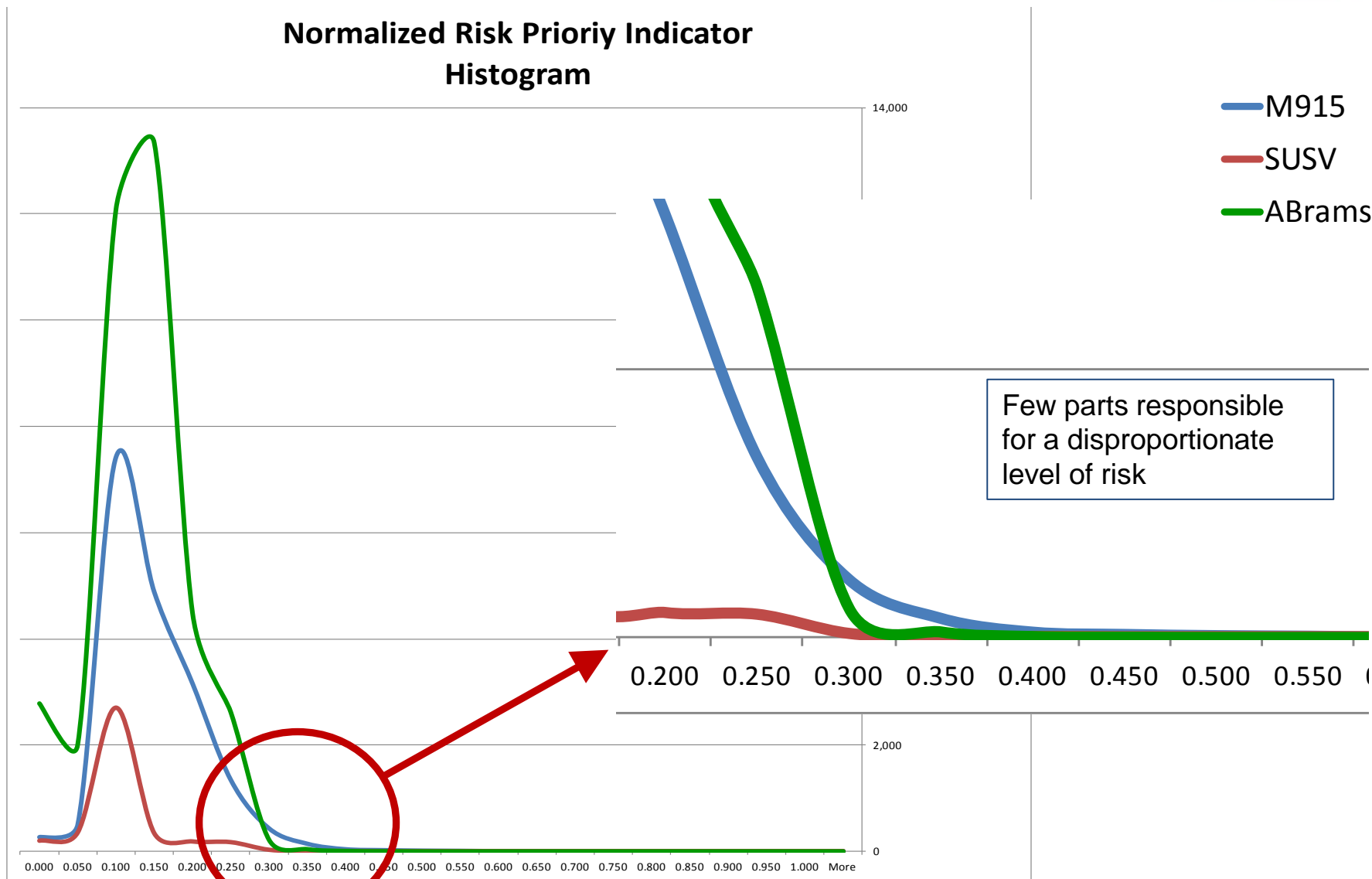
14



SERA Histogram Comparison

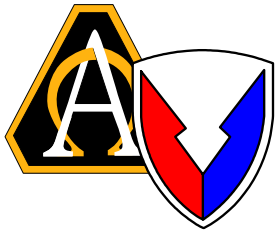


Normalized Risk Priority Indicator
Histogram



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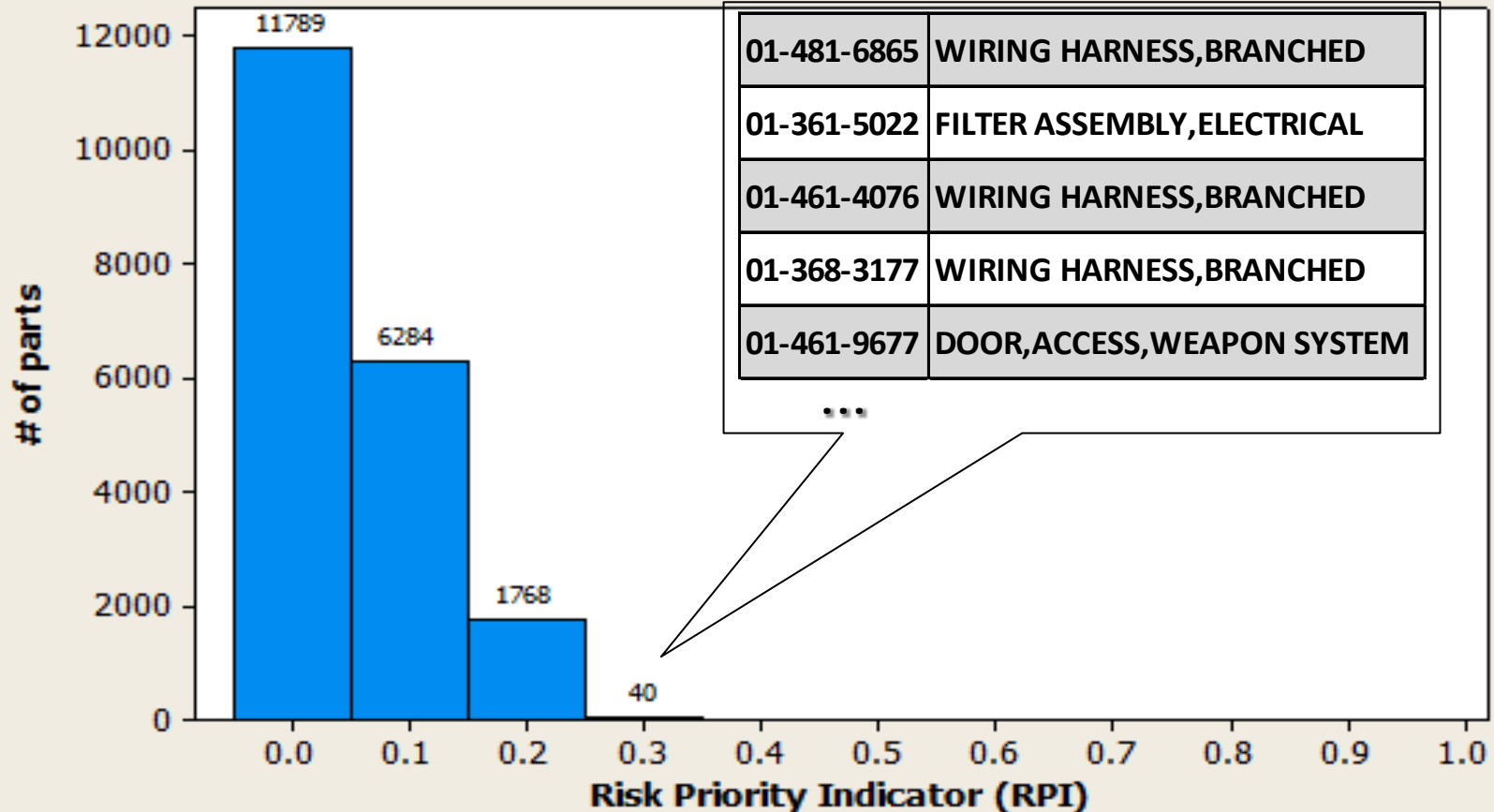
TACOM

Life Cycle Management Command



Initial Abrams Observation

Abrams RPI Distribution









SERA Application/Capability



- Application:
 - Component
 - Vehicle
 - Family of Vehicles
 - PM/PEO Portfolio
 - CBM+ Legacy data
 - LCMC/Command
 - DLA focused efforts
- Data refresh:
 - One-time study (M915)
 - Quarterly, semiannual, annually (Abrams)
 - OEM/PBL download (Abrams/Stryker)
- Potential for other sustainment opportunities – cost and sector studies, VE, commonality assessments

M915 FOV
M872 Trailers
SUSV
MATV
<u>PEO GCS IB Strategy</u>
Abrams
Bradley
Stryker
Paladin FOV
M88
<u>CBM+</u>
FMTV A1
HEMTT A2 & A4
LHS A2 & A4
HET



Summary



Questions and discussion?



Back Up



- SERA Data Elements
- LCMC Support Challenges



SERA Data Elements



Unique Elements From Provisioning Master Record (PMR)

NSN / FSC / NIIN // Remarks

PCCN – Provisioning Contract Control Number

UOC/PCC – Used on Code/Procurement Order Cycle

PLISN - Provisioning Line Item Sequence Number

Item Name

Mfg Part Number/Drawing Number/Standard Identification

NHA PLISN – Next Higher Assembly

Indenture

SMR – Source, Maintenance and Recoverability

SOS – Source of Supply

AMDf Price

Quantity per Assembly

Quantity Each

Ovhl-Qty – Overhaul Quantity

Unit of Measure

CAGE Code – Commercial or Government Entity

RNCC - Reference Number Category Code

RNVC - Reference Number Verification Code

Type Item Code

SMCC - Special Material Content Code

PSPC - Public Sector Partnering Contract

Replacement PLISN

Change Authority

PPCC - Production Price Commitment Curve

ALW Code – Allowance Line Weight Code

ALW Quantity



SERA Data Elements



FEDLOG

SC – Supply Class
AMDF Price – Latest
CAGE list – Latest
CAGE Status Code
AAC – Acquisition Advice Code
Replacement NSN/FSC/NIIN
Replacement NSN Nomenclature
Replacement NSN AMDF Price
FEDLOG Systems Used On
Hazardous Material Callouts
Shelf Life Code
CIIC - Controlled Inventory Item Code

ILAP

ILAP Demand Quantity
Closed Maintenance Work Orders past 5 years
Work Orders opened past 12 months
Rand Readiness Driver
Average Customer Wait Time
Persistent Back Order for 8 consecutive months
Recent Back Order

OSMIS

OSMIS Demand Quantity

Haystack

Acquisition Method Code – AMC
Acquisition Method Suffix Code – AMSC
Document Availability Code - DAC
Contract History



SERA Data Elements



Unique Elements From Various Sources

DUNS Number – DLIS or Dun & Bradstreet
Annual Revenue – Dun & Bradstreet
Pre-Screen Financial Risk Rating – Dun & Bradstreet
ILAP Demand past 2 years
OSMIS Demand past 2 years
Count of all CAGE Codes per NSN
Count of OCONUS CAGE Codes per NSN
Valid CAGE Code identifier
Count of FEDLOG Systems Used on
Count of all CAGE Codes per NSN
Count of OCONUS CAGE Codes per NSN
No valid commercial CAGE Code
Single CAGE Code
Government or Standards CAGE Code
D&B High Risk Indicator
D&B Medium Risk Indicator
D&B Unscored Risk Indicator

OCONUS Only CAGE Code
Discontinued AAC Code with Demand in past 2 years
Readiness Driver
Part Complexity
Single Weapon System
Source Controlled Item
Technical Data Unavailable
Technical Data with Limited Availability
Hazardous Materials
Shelf Life Sensitivity
Persistent Back Order 8-Month
Top 10% CWT
No Demand in past 3 years
Top 10% Closed Maintenance Work Order for NMC Items
Top 10% Open Maintenance Work Order
in past 12M for NMC Items
Open Maintenance Work Order in past 12M for NMC Items



Escalating Support Challenges



- Increasing O&S requirements (65-80% of Life Cycle Cost)
- Equipment condition due to deployments (Degradation)
- Obsolescence of Army systems due to age (25-40 yrs)
- Loss/change of manufacturing sector for COTS (Support Strategy Risk)
- Inconsistent lifecycle sustainment policy & planning (Organic vs. CLS vs. TDPs?)
- Inconsistent engineering/design influence for sustainment (Poor Lifecycle Planning)
- Stove-piped industrial base issue investigation & resolution (ILSC & PM vs. LCMC)
- Negative economic trends impacting commercial industrial base (Industrial Base Risk)
- Environmental and safety impacts (e.g., cadmium, asbestos, Pb-free electronics)

Result = Increase in Reactive Support Issues

Solution = Proactive Logistics Engineering Support